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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,830	02/18/2004	Neal S. Bergano	Bergano 20-CIP4	3768

80635 7590 07/15/2008

TCM/GTPP
55 South Commercial Street
Manchester, NH 03101

EXAMINER	
WANG, QUAN ZHEN	
ART UNIT	PAPER NUMBER
2613	
MAIL DATE	DELIVERY MODE
07/15/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/780,830	BERGANO, NEAL S.	
	Examiner	Art Unit	
	QUAN-ZHEN WANG	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *See Continuation Sheet* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,9-18,20-27,37-39,41-44,46-50,56-62,64-66,68-72,74-80,82-86 and 88-98* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Disposition of Claims: Claims pending in the application are 1-7,9-18,20-27,37-39,41-44,46-50,56-62,64-66,68-72,74-80,82-86,88-98.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/8/2008 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 3, 5-7, 9-13, 16-18, 56, 58, 60-62, and 64-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al. (A. Sano, Y. Miyamoto, T. Kataoka, H. Kawakami and K. Hagimoto, "10 Gbit/s, 300km repeaterless transmission with SBS suppression by the use of the RZ format", Electron. Lett. Vol. 30, 1994, pages 1694-1695) in view of Hickey et al. (M. Hickey and L. Kazovsky, "The STARNET coherent WDM computer communication network: experimental transceiver employing

a novel modulation format", Journal of Lightwave Technology, Volume 12, May 1994, Page(s):876 – 884).

Regarding claims 1 and 56, Sano discloses an apparatus comprising: an optical signal source (fig. 1, DBR-LD) configured to generate an optical signal; a data modulator (fig. 1, the second intensity modulator) coupled to said optical signal source and configured to modulate data on said optical signal at a data modulation frequency; and an amplitude modulator (fig. 1, the first intensity modulator) coupled to said optical signal source and configured to provide a periodic modulation of the intensity of said optical signal. Sano differs from the claimed invention in that Sano does not specifically disclose that the system comprising an amplitude adjustment mechanism configured for selectively adjusting a depth of said periodic modulation of the intensity of said optical signal. However, it is well known in the art to selectively adjust a depth of a periodic modulation of the intensity of an optical signal. For example, Hickey discloses to selectively adjust a depth of a periodic modulation of the intensity of an optical signal (figs. 2, 4, and 7). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to configure the intensity modulation of Sano to adjust the modulation depth, as it is disclosed by Hickey. One of ordinary skill in the art would have been motivated to do so in order to optimize the performance of the optical communication system.

Regarding claims 10 and 64, Sano further teaches that the amplitude modulator is driven by a sinusoidal signal to modulate the intensity of the optical signal (fig. 1).

Regarding claims 11-12, and 65-66, Sano further teaches modulating the intensity of the optical signal at an amplitude modulation frequency phase locked to the data modulation frequency (fig. 1).

Regarding claim 13, Sano further teaches that the data modulation frequency is established by a clock coupled to the amplitude modulator (fig. 1).

Regarding claim 16, Sano further teaches that the amplitude modulator modulates the amplitude of the optical signal at the data modulation frequency with a prescribed phase (fig. 1).

Regarding claim 17-18, Sano further teaches that the system further comprising a clock for establishing the data modulation frequency and an electrical variable-delay line (fig. 1, delay between 10 GHz and PPG) coupling the clock to the amplitude modulator for selectively varying the prescribed phase; and the electrical variable-delay line is a phase shifter.

Regarding claims 3, 5-7, 58, and 60-62, Hickey further discloses varying the modulation depth from 0% to 100% (fig. 7).

Regarding claim 9, Sano and Hickey further disclose that the amplitude modulation is directly coupled to the optical signal (hickey: fig. 2).

4. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al. (A. Sano, Y. Miyamoto, T. Kataoka, H. Kawakami and K. Hagimoto, "10 Gbit/s, 300km repeaterless transmission with SBS suppression by the use of the RZ format", Electron. Lett. Vol. 30, 1994, pages 1694-1695) in view of Hickey et al. (M.

Hickey and L. Kazovsky, "The STARNET coherent WDM computer communication network: experimental transceiver employing a novel modulation format", Journal of Lightwave Technology, Volume 12, May 1994, Page(s):876 – 884), and further in view of Applicant Admitted Prior Art (APA).

Regarding claim 14, the modified system of Sano and Hickey differs from the claimed invention in that Sano and Hickey do not specifically teach that the optical signal generator comprises continuous wave generator. However, Applicant admits that it is well known in the art to include a laser in a light source of an optical transmitter. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include continuous wave generator in the light source of the modified system of Sano and Hickey in order to generate strong optical signals.

Regarding claim 15, the modified system of Sano and Hickey differs from the claimed invention in that Sano and Hickey do not specifically teach that the optical signal generator comprises a laser. However, Applicant admits that it is well known in the art to include a laser in a light source of an optical transmitter. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include a laser in the light source of the modified system of Sano and Hickey in order to generate strong optical signals at a given wavelength.

5. Claims 2, 4, 37-45, 57, 59, 74-86, and 88-89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al. (A. Sano, Y. Miyamoto, T. Kataoka, H. Kawakami and K. Hagimoto, "10 Gbit/s, 300km repeaterless transmission with SBS

suppression by the use of the RZ format", Electron. Lett. Vol. 30, 1994, pages 1694-1695) in view of Hickey et al. (M. Hickey and L. Kazovsky, "The STARNET coherent WDM computer communication network: experimental transceiver employing a novel modulation format", Journal of Lightwave Technology, Volume 12, May 1994, Page(s):876 – 884), and further in view Meissner et al. (U.S. Patent US 5,060,311).

Regarding claims 2, 4, 57, and 59, Sano and Hickey have been discusses above in regard with claims 1, 3, and 58. The modified system of Sano and Hickey differs from the claimed invention in that Sano and Hickey do not specifically disclose using a DPSK modulation format for the data modulation. However, it is well known in the art to use a DPSK modulation format for data modulation. For example, Meissner discloses using a DPSK modulation format for the data modulation in an optical communication system (column 1, lines 58-63). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate the data modulation technique of Meissner in the modified system of Sano and Hickey in order to simplify the system by eliminating the need for coherent reference signal.

Regarding claims 37-39, Hickey further discloses varying the modulation depth from 0% to 100% (fig. 7).

Regarding claim 41, Hickey further discloses that the amplitude modulation is directly coupled to the optical signal (fig. 2).

Regarding claim 42, Sano further teaches that the amplitude modulator is driven by a sinusoidal signal to modulate the intensity of the optical signal (fig. 1, 10GHz signal).

Regarding claim 43, Sano further teaches that the amplitude modulator modulates the amplitude of the optical signal at the data modulation frequency with a prescribed phase (fig. 1, phase adjusting unit 6).

Regarding claim 44, Sano further teaches that the system further comprising a clock for establishing the data modulation frequency and an electrical variable-delay line (fig. 1, phase adjusting unit 6) coupling the clock to the amplitude modulator for selectively varying the prescribed phase.

Regarding claim 74, Sano and Hickey have been discusses above in regard with claims 1, 3, and 58. The modified system of Sano and Hickey differs from the claimed invention in that Sano and Hickey do not specifically disclose that the system includes a receiver. However, it is well known in the art to include a receiver to receive signals in a communication system. For example, Meissner discloses a receiver to receive signals in a communication system (fig. 1). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a receiver, as it is taught by Meissner, in the modified system of Sano and Hickey in order to receiver the transmitted signals.

Regarding claims 75, 77, and 86, Sano and Hickey have been discusses above in regard with claims 1, 3, and 58. The modified system of Sano and Hickey differs from the claimed invention in that Sano and Hickey do not specifically disclose using a DPSK modulation format for the data modulation. However, it is well known in the art to use a DPSK modulation format for data modulation. For example, Meissner discloses using a DPSK modulation format for the data modulation in an optical communication system

(column 1, lines 58-63). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate the data modulation technique of Meissner in the modified system of Sano and Hickey in order to simplify the system by eliminating the need for coherent reference signal.

Regarding claims 76, and 78-80, Hickey further discloses varying the modulation depth from 0% to 100% (fig. 7).

Regarding claim 82, Sano further teaches that the amplitude modulator is driven by a sinusoidal signal to modulate the intensity of the optical signal (fig. 1, 10GHz).

Regarding claims 83-84, Sano further teaches modulating the intensity of the optical signal at an amplitude modulation frequency phase locked to the data modulation frequency (fig. 1).

Regarding claim 85, the modified system of Sanoand Hickey further discloses means for transmitting predetermined characteristic to the transmitter (Sano: fig. 1), and means for selectively varying the periodic modulation imparted to the optical signal (Sano: fig. 1, phase adjusting unit 6); and means for measuring characteristic of the received signal (Hickey: fig. 2).

Regarding claims 88-89, Sano further discloses that signal-to-noise-ration and Q-factor (Q-value) are used for the predetermined characteristic.

6. Claims 20, 22-27, and 69-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al. (A. Sano, Y. Miyamoto, T. Kataoka, H. Kawakami and K. Hagimoto, "10 Gbit/s, 300km repeaterless transmission with SBS suppression by the

use of the RZ format", Electron. Lett. Vol. 30, 1994, pages 1694-1695) in view of Hickey et al. (M. Hickey and L. Kazovsky, "The STARNET coherent WDM computer communication network: experimental transceiver employing a novel modulation format", Journal of Lightwave Technology, Volume 12, May 1994, Page(s):876 – 884), and further in view of Kitajima et al. (U.S. Patent US 5,515,196).

Regarding claims 20, and 69, the modified system of Sano and Hickey differs from the claimed invention in that Sano and Hickey do not specifically teach that the system further comprises a phase modulator coupled to the data modulator, the phase modulator configured to provide optical phase modulation to the optical signal. However, it is well known in the art to include a phase modulator in an optical transmitter to modulate the phase of the optical signal to be transmitted. For example, Kitajima discloses an optical transmitter apparatus comprising a phase modulator in an optical transmitter to modulate the phase of the optical signal to be transmitted (fig. 13). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a phase modulator, as it is taught by Kitajima, in the modified system of Sano and Hickey to modulate the phase of the optical signal to be transmitted in order to reduce the time jitter of the optical signal caused by the influence of dispersion.

Regarding claims 22-24, and 70-71, Kitajima further teaches that the apparatus further comprising a clock for establishing the data modulation frequency, and wherein the clock is coupled to the phase modulator so that the phase modulator provides

optical phase modulation at a frequency that is phase locked and equal to the data modulation frequency (fig. 13).

Regarding claims 25-27, and 72, the modified system of Sano and Hickey differs from the claimed invention in that Sano and Hickey do not specifically disclose that the apparatus further comprising an electrical variable-delay line coupling the clock to the phase modulator for selectively varying the phase of the optical phase modulation provided by the phase modulator, and the electrical variable-delay line is a phase shifter, and the phase modulator provides phase modulation at a frequency that is phase locked and equal to the data modulation. However, Sano discloses an electrical variable-delay line coupling the clock to the amplitude modulator for selectively varying the phase of the optical phase modulation provided by the phase modulator, and the electrical variable-delay line is a phase shifter (fig. 1). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to configure the electrical variable-delay line coupling the clock to the phase modulator for selectively varying the phase of the optical phase modulation provided by the phase modulator, and the electrical variable-delay line is a phase shifter, and the phase modulator provides phase modulation at a frequency that is phase locked and equal to the data modulation. One of ordinary skill in the art would have been motivated to do so in order to synchronize the data modulation and the phase modulation.

7. Claims 46-50, and 90-98 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al. (A. Sano, Y. Miyamoto, T. Kataoka, H. Kawakami and K.

Hagimoto, "10 Gbit/s, 300km repeaterless transmission with SBS suppression by the use of the RZ format", Electron. Lett. Vol. 30, 1994, pages 1694-1695) in view of Hickey et al. (M. Hickey and L. Kazovsky, "The STARNET coherent WDM computer communication network: experimental transceiver employing a novel modulation format", Journal of Lightwave Technology, Volume 12, May 1994, Page(s):876 – 884), and Meissner et al. (U.S. Patent US 5,060,311), and further in view of Kitajima et al. (U.S. Patent US 5,515,196).

Regarding claim 46, the modified system of modified system of Sano, Hickey, and Meissner differs from the claimed invention in that Sano, Hickey, and Meissner do not specifically teach that the system further comprises a phase modulator coupled to the data modulator, the phase modulator configured to provide optical phase modulation to the optical signal. However, it is well known in the art to include a phase modulator in an optical transmitter to modulate the phase of the optical signal to be transmitted. For example, Kitajima discloses an optical transmitter apparatus comprising a phase modulator in an optical transmitter to modulate the phase of the optical signal to be transmitted (fig. 13). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a phase modulator, as it is taught by Kitajima, in the modified system of Sano, Hickey, and Meissner to modulate the phase of the optical signal to be transmitted in order to reduce the time jitter of the optical signal caused by the influence of dispersion.

Regarding claims 47-48, Kitajima further teaches that the apparatus further comprising a clock for establishing the data modulation frequency, and wherein the

clock is coupled to the phase modulator so that the phase modulator provides optical phase modulation at a frequency that is phase locked and equal to the data modulation frequency (fig. 13).

Regarding claims 49-50, the modified system of the modified system of Sano, Hickey, Meissner, and Kitajima differs from the claimed invention in that Sano, Hickey, Meissner, and Kitajima do not specifically disclose that the apparatus further comprising an electrical variable-delay line coupling the clock to the phase modulator for selectively varying the phase of the optical phase modulation provided by the phase modulator, and the electrical variable-delay line is a phase shifter, and the phase modulator provides phase modulation at a frequency that is phase locked and equal to the data modulation. However, Sano discloses an electrical variable-delay line coupling the clock to the amplitude modulator for selectively varying the phase of the optical phase modulation provided by the phase modulator, and the electrical variable-delay line is a phase shifter (fig. 1). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to configure the electrical variable-delay line coupling the clock to the phase modulator for selectively varying the phase of the optical phase modulation provided by the phase modulator, and the electrical variable-delay line is a phase shifter, and the phase modulator provides phase modulation at a frequency that is phase locked and equal to the data modulation. On of ordinary skill in the art would have been motivated to do so in order to synchronize the data modulation and the phase modulation.

Regarding claim 90, the modified system of Sano, Hickey, and Meissner differs from the claimed invention in that Sano, Hickey, and Meissner do not specifically teach that the system further comprises a phase modulator coupled to the data modulator, the phase modulator configured to provide optical phase modulation to the optical signal. However, it is well known in the art to include a phase modulator in an optical transmitter to modulate the phase of the optical signal to be transmitted. For example, Kitajima discloses an optical transmitter apparatus comprising a phase modulator in an optical transmitter to modulate the phase of the optical signal to be transmitted (fig. 13). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a phase modulator, as it is taught by Kitajima, in the modified system of Sano, Hickey, and Meissner to modulate the phase of the optical signal to be transmitted in order to reduce the time jitter of the optical signal caused by the influence of dispersion.

Regarding claims 91-92, Kitajima further teaches that the apparatus further comprising a clock for establishing the data modulation frequency, and wherein the clock is coupled to the phase modulator so that the phase modulator provides optical phase modulation at a frequency that is phase locked and equal to the data modulation frequency (fig. 13).

Regarding claim 93, Hickey further discloses varying the modulation depth from 0% to 100% (fig. 7).

Regarding claim 94, the modified system of Sano, Hickey, and Kitajima differs from the claimed invention in that Sano, Hickey, and Kitajima do not specifically disclose

that the apparatus further comprising an electrical variable-delay line coupling the clock to the phase modulator for selectively varying the phase of the optical phase modulation provided by the phase modulator, and the electrical variable-delay line is a phase shifter, and the phase modulator provides phase modulation at a frequency that is phase locked and equal to the data modulation. However, Sano discloses an electrical variable-delay line coupling the clock to the amplitude modulator for selectively varying the phase of the optical phase modulation provided by the phase modulator, and the electrical variable-delay line is a phase shifter (fig. 1). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to configure the electrical variable-delay line coupling the clock to the phase modulator for selectively varying the phase of the optical phase modulation provided by the phase modulator, and the electrical variable-delay line is a phase shifter, and the phase modulator provides phase modulation at a frequency that is phase locked and equal to the data modulation. One of ordinary skill in the art would have been motivated to do so in order to synchronize the data modulation and the phase modulation.

Regarding claim 95, the modified system of Sano, Hickey, and Kitajima further discloses means for transmitting predetermined characteristic to the transmitter (Sano: fig. 1), and means for selectively varying the periodic modulation imparted to the optical signal; and means for measuring characteristic of the received signal (Hickey: fig. 2).

Regarding claim 96, Meissner further discloses using a DPSK modulation format for the data modulation in an optical communication system (column 1, lines 58-63).

Regarding claims 97-98, Sano further discloses that signal-to-noise-ration and Q-factor (Q-value) are used for the predetermined characteristic.

8. Claims 21, and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al. (A. Sano, Y. Miyamoto, T. Kataoka, H. Kawakami and K. Hagimoto, "10 Gbit/s, 300km repeaterless transmission with SBS suppression by the use of the RZ format", Electron. Lett. Vol. 30, 1994, pages 1694-1695) in view of Hickey et al. (M. Hickey and L. Kazovsky, "The STARNET coherent WDM computer communication network: experimental transceiver employing a novel modulation format", Journal of Lightwave Technology, Volume 12, May 1994, Page(s):876 – 884) and Kitajima et al. (U.S. Patent US 5,515,196), and further in view of Takayama et al. (K. Takayama et al., "An all-optical 10-GHz LD-based clock regenerator using a Mach-Zehnder interferometer-type NRZ-RZ converter", *Tech digest* of *ECOC* '91, vol. MoC1-2, pp. 77-80, September 1991).

Regarding claims 21 and 68, the modified system of Sano, Hickey, and Kitajima discloses the claimed invention except that Sano, Hickey, and Kitajima do not specifically teach that the polarization modulator is coupled to the data modulator through the amplitude modulator. However, it is well known in the art to use an amplitude modulator following a data modulator. For example, Takayama discloses that the amplitude modulator (fig. 1, Mach-Zehnder interferometer) is arranged to follow the data modulator (not shown in the figure). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to arrange the

amplitude modulator following the data modulator in the modified system of Sano, Hickey, and Kitajima, and, therefore, the polarization modulator is coupled to the data modulator through the amplitude modulator. One ordinary skill in the art would be motivated to do so in order to generate RZ signals from NRZ signals.

Response to Arguments

9. Applicant's arguments filed on September 17, 2007 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Edagawa et al. (N. Edagawa et al., "Robustness of 20 Gbit/s, 100 km-spacing, 1000 km solution transmission system", Electron. Lett. Vol. 31, 1995, pages 663-665) disclose a transmitter comprising a data modulator and amplitude modulator.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan-Zhen Wang whose telephone number is (571) 272-3114. The examiner can normally be reached on 9:00 AM - 5:00 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

7/13/2008

/Quan-Zhen Wang/
Primary Examiner, Art Unit 2613